

Translation

PATENT COOPERATION TREATY

PCT/EP2003/002753



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

15 SEP 2004

Applicant's or agent's file reference D80612PC	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/002753	International filing date (day/month/year) 17 March 2003 (17.03.2003)	Priority date (day/month/year) 15 March 2002 (15.03.2002)
International Patent Classification (IPC) or national classification and IPC C07C 51/43, 57/04		
Applicant STOCKHAUSEN GMBH		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 7 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 15 October 2003 (15.10.2003)	Date of completion of this report 19 July 2004 (19.07.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/EP2003/002753

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
 pages 1-74, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the claims:
 pages _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages 1-21, filed with the letter of 04 March 2004 (04.03.2004)
- ☒ the drawings:
 pages 1-7, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
 These elements were available or furnished to this Authority in the following language _____ which is:
- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 03/02753

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-16	YES
	Claims	17-21	NO
Inventive step (IS)	Claims	1-16	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-16	YES
	Claims		NO

2. Citations and explanations

D1: US-A-4 780 568 (PASCOE RALPH F), 25 October 1988
(1988-10-25)

D2: EP-A-0 616 998 (SULZER CHEMTECH AG), 28 September 1994
(1994-09-28) (cited in the application)

D3: DE 197 40 252 A (BASF AG), 18 March 1999 (1999-03-18)
(cited in the application)

1. The process according to claims 1 to 8 and 16 differs from the processes known from documents D1 to D3 inasmuch as in the present invention the (meth)acrylic acid composition which is to be purified has a particular water content, whereas the compositions according to documents D1 to D3 contain no water.

The device according to claims 9 to 15 differs from the devices disclosed in documents D1 to D3 by virtue of the inclusion of a (meth)acrylic acid reactor together with a quench absorber.

The subject matter of claims 1 to 16 is therefore novel over the aforementioned prior art (PCT Article 33(2)).

2. Proceeding from D1, the problem addressed can be seen as that of how to achieve direct purification of an

aqueous (meth)acrylic acid composition by means of a crystallisation process.

The invention solves this problem using the process according to claim 1 and the device according to claim 9.

There is nothing in the prior art that might lead a skilled person to the claimed process or the claimed device because the crystallisation processes disclosed in documents D1 to D3 always start with a water-free (meth)acrylic acid composition, and the substitution of aqueous (meth)acrylic acid compositions does not seem to be an obvious step.

The claimed device likewise cannot be regarded as obvious on the basis of the prior art because it can be used for the purification of aqueous (meth)acrylic acid compositions.

Moreover, the degree of purity achieved (over 99.5%) using aqueous (meth)acrylic acid compositions can be considered significant.

The subject matter of claims 1 to 16 therefore involves an inventive step (PCT Article 33(3)).

3. The subject matter of claims 1 to 16 is industrially applicable (PCT Article 33(4)).
4. A substance (claims 17, 19 and 20), a process for the production of a compound (claim 18) and the use thereof (claim 21) do not acquire novelty simply because the compound was produced by a process that is a modification of a prior art process.

A particular degree of purity does not make a substance novel, especially since (meth)acrylic acid can be obtained in an extremely pure form.

The subject matter of claims 17 to 21 cannot therefore be considered novel (PCT Article 33(2)) over the prior art (which is also cited in the description).

5. In view of the comments on pages 14 and 15 it seems essential that the (meth)acrylic acid crystals satisfy the conditions specified in claim 2. These characterising features are not included in the main claim (claim 1).
6. Claim 10 seems redundant (PCT Article 6).
7. The prior art as disclosed in D1 should be mentioned in the description.
8. The description is not consistent with the claims.